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ABSTRACT

A study focused on 10th-grade students for the 1990-91 school year at Arthur Hill and Saginaw High Schools, Michigan, to examine system-related problems in course selection/scheduling that may decrease student enrollments at the Averill Career Opportunities Center (COC). A random sample consisted of 316 of 472 regular education students at the 2 schools. Three major research questions guided the study: whether course passage history affected decisions to attend COC; whether students with a 2.51 or greater grade point average (GPA) enrolled in COC more often than students with lower GPAs; and whether students with better average hourly attendance enrolled in COC more often. Results of chi-square statistical test analyses indicated deterrents to enrollment at COC were passage of the language arts requirement, success at or above a certain level, full load schedules, and 2.51 or higher GPA. The tendency to attend COC was not the same for the major racial/ethnic groupings or both genders. Students with a lower than average hourly attendance record enrolled in COC more often. Recommendations were a limitation on the amount of competing electives, consistency between high schools in titling courses, effective high school attendance policies, alternatives to meet requirements, and consistent recordkeeping. (The 18-page report is followed by these appendixes: 17 references and 62 data tables that present chi-square statistical test results.) (YLB)

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ED 362 787

EVALUATION REPORT

VARIABLES THAT MAY EFFECT COC ATTENDANCE OVER A THREE YEAR HIGH SCHOOL CAREER (1990-1993)

1992-1993

DEPARTMENT OF EVALUATION SERVICES

- PROVIDING ASSESSMENT, PROGRAM EVALUATION AND RESEARCH SERVICES -

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VARIABLES THAT MAY EFFECT COC ATTENDANCE OVER A THREE YEAR HIGH SCHOOL CAREER (1990-1993)

1992-1993

An Approved Report of the

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INTRODUCTION

A series of special studies are being planned to examine potential reasons for decreased enrollments at the Averill Career Opportunities Center (COC). This vocational and technical training center has been experiencing a decline in enrollment from both city high schools (see Appendix A for a six year comparison of enrollments). It offers a wide range of programming in the vocational/technical program areas (see Appendix A for the offerings as listed in the Secondary Education Program Guide, 1992-93, Grades 7-12).

This special study focuses on the tenth grade students for the 1990-91 school year at Arthur Hill and Saginaw High Schools. Generally the intent of the study is to examine system related problems in course selection/scheduling at the two high schools that may decrease student enrollments at the COC.

The next section describes the procedures used in the study.

PROCEDURES

The population to be studied specifically involved 1990-91 tenth grade regular education students that had three years of courses (six semesters) at the city high schools. This population was chosen because it would allow reviews of more complete schedules over the course of the three years than otherwise possible. Special education students were excluded from the study (see Appendix B for a review of the numbers of special education students from the two high schools that completed six semesters of course work) so that regular education would remain the primary focus of the study.[1] From this population, a systematic random sample of approximately 160 students from each tenth grade high school population was to be selected. At Saginaw High School sampling was not necessary because the population and sample count sought were approximately equal. The resulting random sample was 66.9% (or 316 of 472) of the student population. Table 1 below displays the population and sample counts of the 1990-91 tenth graders with three complete years of schedules.

Table 1

Tenth Grade Students With Complete Schedules For Six Semesters

School	Population	Sample
Arthur Hill	308	152
Saginaw High	164	164
Total	472	316

[1] The special education student population (with a six semester program) were partially analyzed (see Appendix B) to allow for the possibility of a follow-up critique/review related to their COC enrollment patterns. Regular education not the special education population of students was the focus of the present study.

As can be seen in Table 1 above, approximately equal numbers of tenth grade students were sampled from both high schools. Table 2 below presents the racial/ethnic background of students for both the population and sample at both high schools.

Table 2

Tenth Grade Students by Racial/Ethnic Background

	Arthur Hill				Saginaw High				Total			
Racial/Ethnic Background	Population #	%	Sample #	%	Population #	%	Sample #	%	Population #	%	Sample #	%
White	173	(56.2)	85	(55.9)	2	(1.2)	2	(1.2)	175	(37.1)	87	(27.5)
Black	74	(24.0)	41	(27.0)	154	(93.9)	154	(93.9)	228	(48.3)	195	(61.7)
Other	61	(19.8)	26	(17.1)	8	(4.9)	8	(4.9)	69	(14.6)	34	(10.8)
Total	308	(100.0)	152	(100.0)	164	(100.0)	164	(100.0)	472	(100.0)	316	(100.0)

After a perusal of Table 2, above, it is evident that the sample is roughly representative of the two hign school populations in terms of racial/ethnic backgrounds. The overall population is approximately 10% under-represented by white students, approximately 14% over-represented by black students, and approximately 4% under-represented by other minority students.

Table 3 below presents the gender of students from the entire population as well as that of the sample.

Table 3

Tenth Grade Students by Gender

Gender	Arthur Hill				Saginaw High				Total			
	Population		Sample		Population		Sample		Population		Sample	
	#	%	#	%	#	%	#	%	#	%	#	%
Male	147	(47.7)	74	(48.7)	66	(40.2)	66	(40.2)	213	(45.1)	140	(44.3)
Female	161	(52.3)	78	(51.3)	98	(59.8)	98	(59.8)	259	(54.9)	176	(55.7)
Total	308	(100.0)	152	(100.0)	164	(100.0)	164	(100.0)	472	(100.0)	316	(100.0)

After a study of Table 3, above, it is apparent that the sample closely approximates the population in terms of the proportion of males versus females (approximately 45% versus 55% respectively).

Appendix C gives the breakdowns of sampled Arthur Hill and Saginaw High students on other demographics and selected variables related to course selection/scheduling and graduation.

RESEARCH QUESTIONS

Three major research questions served as guides to this study. They arose from consideration of course selection/scheduling decisions within a system context.

Research Question One

This overall question was: Does course passage history effect decisions to attend COC? To more fully explore the whole area of COC enrollment, a series of sub-questions was necessary. They included:

1A. Are certain required courses (in isolation or in combination with others) a detriment to COC enrollment?

1B. Are certain success levels at the home school more of a detriment than others to COC enrollment?

1C. Are full load schedules with required courses early in students' high school career related to students' decisions to attend COC?

1D. Are full load schedules (six or more courses per semester which are influenced by choice or past failure) related to not attending COC?

1E. Of those students not passing a course during a school year (sophomore or junior year), does taking a summer school course(s) after a failure increase the probability of COC enrollment?

Research Question Two

The second major research question was: Do students with a 2.51 or greater grade point average (GPA) enroll in COC more often than do students with a 2.50 or less GPA? To more fully expand this question, the following associated issues were explored.

2A. Is the tendency to attend COC the same at both high schools?

2B. Is the tendency to attend COC the same for each of the major racial/ethnic groupings?

2C. Is the tendency to attend COC the same for both genders?

Research Question Three

The final major research question was: Do students with better than average hourly attendance enroll in COC more often than do students with less than average hourly attendance? To more completely explore this issue, the following associated questions were posed.

3A. Is the tendency to enroll in the COC the same at both schools?

3B. Is the tendency to enroll in the COC the same for each of the major racial/ethnic groupings?

3C. Is the tendency to enroll in the COC the same for both genders?

STATISTICAL ANALYSIS

The chi-square statistical test for independence was selected due to the nominal nature of the majority of the data. A significance level of .05 or less was selected as the criterion to test the hypothesis of independence. A contingency table for each of the research questions along with the sub-questions was constructed such that fewer than 20% of the cells would have an expected frequency of less than five individuals and no cell has an expected frequency of less than one individual as recommended in various statistical textbooks such as Siegel (1956) to allow for a meaningful calculation of the chi-square statistic.

The null hypothesis for each of the questions was "no differences will exist related to the variable of interest in the proportion of students attending COC." (See Appendix D for a description of how the variables of interest were categorized into two or three groups.) While the alternative hypothesis was "differences will exist in the proportion of students attending the COC related to the variable of interest." The chi-square results by variable along with the p-values and contingency coefficients are summarized in Appendix E.

FINDINGS

The findings that follow stem from a review of the data presented in Appendix C. They will be presented in a question and answer format. Only trends that are significant at p = .05 or less will be recognized in the discussion.[2]

Question: 1A. Are certain required courses (in isolation or in combination with others) a detriment to COC enrollment?

Answer: History as a course in isolation to other courses was the required course studied. History is not a factor that influenced COC course selection in any differential manner in all levels tested (district level by grade, school by grade, minority or non-minority by grade and male or female by grade).

The areas of language arts, health education, physical education, and history in combination with each other were fully explored at each of the levels described above plus combining grades 10 and 11. (It should be noted that sample size limitations made certain comparisons impossible because of cell size requirements of chi-square). The passage of the language arts requirements when taken with other associated requirements appears to be a block for white students in attending COC. In other

[2]The contingency tables showing significant results along with the chi-square statistics, degrees of freedom, probabilities, contingency coefficients and remarks are given in Appendix F.

words, passage of the language arts requirement by white students in grades 10 and 11 was associated with a higher than expected rate of not enrolling in a COC course.

Question: 1B. Are certain success levels at the home school more of a detriment than others to COC enrollment?

Answer: Yes. Success at or above a certain level tends to reduce the likelihood of attending the COC than could be expected. These include the following:

- passing requirements in grade 10, 11, and both 10 and 11 by the end of each respective level is related to not going to COC;
- passing of many courses (four or more per semester) in grade 10 (semester 2), 11, and 12 is related to not going to COC; and
- passing of all courses attempted in grades 10, 11, and 12 (except grade 12, semester 2) is related to not going to COC.

Question: 1C. Are full load schedules with required courses early in students' high school career related to students' decisions to attend COC?

Answer: No. There was no difference between those with a heavy schedule (six or more courses) and a light schedule (five or less courses) in their enrollment in COC courses for grade 10 in either the first or the second semester.

Question: 1D. Are full load schedules (six or more courses per semester which are influenced by choice or past failure) related to not attending COC?

Answer: Yes. Students with a heavy/full schedule[2] in either grade 11, semester 1; grade 11, semester 2; or grade 12, semester 1 were more likely not to enroll in a COC course than expected.

Question: 1E. Of those students not passing a course during a school year (sophomore or junior year), does taking a summer school course(s) after a failure increase the probability of COC enrollment?

Answer: No. Summer school participation did not increase the probability of COC course attendance.

Question: 2. Do students with a 2.51 or greater grade point average (GPA) enroll in COC more often than do students with a 2.50 or less GPA?

Answer: No. In fact, students with a 2.51 or higher GPA enroll in COC courses less often than expected and students with a 2.50 or less GPA enroll in COC courses more often than could be expected. Thus low achieving students have a greater tendency to enroll in COC course offerings.[3]

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[2] In determining schedule load, each COC (or any other block) course was considered equal to a single home school course.

[3] Question two examines COC enrollment versus high school career GPA. GPA at the end of the 10th grade versus COC enrollment was also examined and the same trend was found. As well, the trend was statistically significant for all subgroups (see Appendix G).

Question: 2A. Is the tendency to attend COC the same at both high schools?

Answer: No. At Arthur Hill, low achieving students have a greater than expected observed enrollment in COC courses; while high achieving students have a lower than expected observed COC enrollment. At Saginaw High, no statiscally significant trend was found.

Question: 2B. Is the tendency to attend COC the same for each of the major racial/ethnic groupings?

Answer: No. Only White students show a pattern where low GPA students show greater numbers enrolling in COC courses than expected and high GPA students show lesser numbers enrolling in COC courses than expected. For minority students, no statistically significant tendency was found.

Question: 2C. Is the tendency to attend COC the same for both genders?

Answer: No. Females with low GPA's enroll more often in COC than expected and those with high GPA's enroll less often in COC than expected. For males, no statistically significant tendency was found.

Question: 3. Do students with better than average hourly attendance enroll in COC more often than do students with less than average hourly attendance?

Answer: No. The finding is just the opposite. Students with a better than average hourly attendance (below the median hours absent) enroll in COC less often than do students with a lower than average hourly attendance record.[4]

Question: 3A. Is the tendency to enroll in the COC the same at both schools?

Answer: No. At Arthur Hill, students with higher than average hourly attendance enroll in COC less often than expected, while those with lower than average hourly attendance enroll in COC more often than expected. At Saginaw High, no statistically significant tendency was found.

Question: 3B. Is the tendency to enroll in the COC the same for each of the major racial/ethnic groupings?

Answer: No. White, poor attending students show greater proportional enrollment in COC courses, while White, good attending students show a smaller than expected proportional enrollment at COC. For minority students, no statistically significant trend was found.

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[4]This analysis considers COC enrollment versus average attendance across all three high school years. An additional analysis considering COC enrollment versus average attendance in 10th grade was conducted. It was found that poor attending female, Saginaw High, and minority students were more likely to enroll in COC than were good attending students of these categories. No statistically significant trend was found for male, Arthur Hill, or white students (see Appendix G).

Question: 3C. Is the tendency to attend COC the same for both gender groups?

Answer: No. Females with poor attendance records enroll more often at COC than expected and those with good attendance records enroll less often in COC courses than could be expected. For males, no statistically significant trend was found.

Question: As a result of this study, how would you describe the student group most likely to attend the COC?

Answer: Students with the following characteristics are more likely to attend COC:

- failed one or more required courses for grade 10 and/or 11;
- failed one or more semesters of the language arts requirements for grades 10 and/or 11 (White students only);
- carried a course load of five or less classes (light load) in grades 11 and 12;
- maintained a 2.50 or less grade point average (GPA); and
- showed a greater than average hourly absence record.

Question: As a result of this study, how would you describe the student group most likely not to attend the COC?

Answer: Students with the following characteristics are more likely not to attend COC:

- passed required courses for grade 10 and/or 11;
- passed language arts requirements in grades 10 and 11 (White students only);
- took a heavy course load of six or more courses in grades 11 and 12;
- held a 2.51 or more GPA; and
- possessed a good attendance record (less than the median hourly absence rate).

Question: Were there any other important findings as a result of this study?

Answer: Yes. Other pertinent findings of importance included the following:

- There are 14 categories of elective courses at each home school (see Table C8). These electives may offer competition to COC enrollment.
- There are record keeping inconsistencies at both high schools.
  - -- Fifty-six student records in total were reviewed because of inconsistencies at Saginaw High and Arthur Hill. These inconsistencies were mainly of students who graduated but computer generated transcripts of regular and summer courses failed to confirm that all course graduation requirements were satisfied.

-- At both high schools, student transcripts are maintained in card files. However, at Arthur Hill these cards are maintained in one location while at Saginaw High the cards are maintained in different areas.

-- At one high school transcripts from six students, who each had completed six semesters, were missing.

-- Waivers of required courses (such as physical education, etc.) were not listed on transcripts.

The final section of this report offers recommendations into areas where system problems may be causing decreased enrollments at the COC.

RECOMMENDATIONS

During the course of conducting this study a number of observations were made which relate to potential system-wide problems. Within the following recommendations are suggestions for future inquiries to further address the nature of these problems. Also offered are recommendations which address the initial questions posed about COC enrollments.

- From Table C-8 (Appendix C), one can see that a large variety of home-school electives offer competition to COC attendance. A study of this table reveals that COC elective choices represent the largest percentage or 16.9% (846 of 4996) of the district level attempted courses, the largest percentage or 21.2% (516 of 2433) of the Saginaw High attempted courses, and the third largest percentage or 12.9% (330 of 2563) of the Arthur Hill attempted courses. It is possible that a limitation on the amount of competing electives - especially those which closely parallel or even duplicate COC offerings - would enhance COC enrollment.

- It was noted that credits awarded for successfully passing a 2.5 hour block COC class with .5 hour for transportation was less than the credits awarded for passing three one-hour classes taken at a home school. A review of this policy should be undertaken to examine whether this difference in credits earned is a determent to COC attendance.

- It was observed that there is little consistency between the high schools in the titling and numbering of courses. This makes comparisons of potentially parallel courses subjective. The titling and numbering process should be examined and, if necessary, revamped to insure consistency.

- Effective high school attendance policies may lead students to perceive that enrolling in COC courses would interfere with keeping a good home school attendance record. For example, students being listed as absent from COC because they remained at their home school to take the MEAP test. Attendance policies should be reformulated so that, simultaneously, good attendance at the home school can be maintained and COC enrollment encouraged. Such reformulation should include allowance for transportation difficulties beyond students' control and COC/home school conflicts.

- The typical COC student is one with lower than average attendance and academic performance records. Steps may be taken by COC personnel to demonstrate to students with higher than average attendance/academic performance that COC courses can be beneficial to them and to their life/career goals. This message should be started earlier in the school careers of all students [see Staff (1993b) and McLelland (1990) for how this might be done] and COC options should also be available at an earlier age (middle school) on an exploratory basis.

- Not attaining more stringent graduation requirements may be, for some students, impairments to either COC attendance or graduation. System-wide alternatives should be made available to students which would allow them more options by which requirements could be met (weekend classes, night classes at home school, block classes which incorporate requirements with other course-work more suited to different student learning styles, etc.).

- Individual students learn at rates faster or slower than average (three high school years). System flexibility which does not promote a rigid time table might be considered.

- It was confirmed that successfully passing a course required at least a "D-" grade. However, instances existed wherein students who had successfully passed a class, retook that class. An explanation should be sought to why this occurs (to improve GPA, limiting attractive alternatives to the previously passed class, etc.). Counselors might be able to advise some of these students who retake courses at the home school into a COC course that might allow them the same or better opportunity to relearn the same skills in a vocational/technical setting.

- None of the records of adult high school classes which are taken by Saginaw High and Arthur Hill students to meet graduation requirements are available on the district's main computer. Efforts to place adult education records on KCASTS - initiated by the district's Mainframe Information Systems Users Group - could be continued. Likewise summer school classes sometimes are not entered on the computer file if fees are not paid. These passed courses could be entered on the computer with the entry that fees are not paid.

- It was also found that record keeping at the high schools was not consistent. Practices could be instituted to provide consistency and checks could be conducted on a semester basis to determine that comparable records are being maintained for all enrolled students (both paper copy at the building and data entry to KCASTS).

- Some limits on COC attendance were due to students' inability to pass their required coursework on time. Curriculum planners might consider the possibility of developing COC courses which would meet the State and district core subject area requirements.

- If the systemic problems related to attendance and scheduling cannot be solved, then making the COC a magnet high school site might be explored. Under such a plan, the COC would offer a full-day high school program. Vocational/technical offerings would serve to meet the required credits for high school graduation. This probably would require broadening staff certification and extensive revision of the curriculum. Hopefully, program offerings and opportunities at the COC fine-tuned to meet more general education graduation requirements would maintain a high level of enrollment.

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APPENDICES

APPENDIX A

Table A-1

Six Year Comparison of the COC Headcount From Both High Schools as a Percent of Their Fourth Friday Count

	Arthur Hill			Saginaw High			TOTAL		
School Year	COC #	Fourth Friday #	%	COC #	Fourth Friday #	%	COC #	Fourth Friday #	%
1987-88	402	1,721	23.35	213	1,369	15.55	615	3,090	19.90
1988-89	376	1,669	22.52	172	1,221	14.08	548	2,890	18.96
1989-90	380	1,662	22.86	193	1,121	17.21	573	2,783	20.58
1990-91	293	1,663	17.61	172	1,017	16.91	465	2,680	17.35
1991-92	271	1,379	18.34	173	944	18.32	444	2,323	19.11
1992-93	253	1,300	19.46	151	888	17.00	404	2,188	18.46
Percent Difference 1987/88 to 1992/93	-37.1	-24.5[a]	-	-29.2	-35.1[b]	-	-34.3	-29.2[c]	-

Note. All counts include special education students.
[a] 12.6% more decline in COC enrollment than overall Arthur Hill enrollment.
[b] 5.9% less decline in COC enrollment than overall Saginaw High enrollment.
[c] 5.1% more of a decline in COC than evidenced district-wide.

APPENDIX A

AVERILL CAREER OPPORTUNITIES CENTER PROGRAMS

Automotive Programs

Auto Body
Auto Reconditioning

Building Trades Programs

Electricity
Building Construction

Business Programs

Business Technology and Computer Information Systems
Information Processing
Marketing/Management
Travel and Tourism

Communications Programs

Graphic Arts
Media Production/Broadcasting

Floriculture Program

Landscaping/Floral Design

Medical Programs

Medical Careers
Nursing Occupations

Personal Service Programs

Commercial Foods
Child Care and Guidance
Cosmetology
Public Safety, Law Enforcement and Security

Technical Programs

Aeronautics
Electronics
Engineering/Computer Drafting
Machine Shop
Major Appliance Repair
Principles of Technology (offered as early as grade 10)
Transportation Services Technology
Welding

APPENDIX B

Table B-1

Racial/Ethnic Breakdown for Special Education Students With Six Regular School Year Semesters of Course Work

Racial/Ethnic	Arthur Hill #	Arthur Hill %	Saginaw High #	Saginaw High %	Total #	Total %
White	10	(47.6)	0	(0.0)	10	(27.8)
Black	9	(42.9)	14	(93.3)	23	(63.9)
Other Groups Combined	2	(9.5)	1	(6.7)	3	(8.3)
TOTAL	21	(100.0)	15	(100.0)	36	(100.0)

Table B-2

Gender Breakdown for Special Education Students With Six Regular School Year Semesters of Course Work

Gender	Arthur Hill #	Arthur Hill %	Saginaw High #	Saginaw High %	Total #	Total %
Male	6	(28.6)	14	(6.7)	20	(55.6)
Female	15	(71.4)	1	(93.3)	16	(44.4)
TOTAL	21	(100.0)	15	(100.0)	36	(100.0)

APPENDIX B

Table B-3

Percent of Special Education Programming for Special Education Students With Six Regular School Year Semesters of Course Work

Percent Special Education	Arthur Hill #	Arthur Hill %	Saginaw High #	Saginaw High %	Total #	Total %
100	5	(23.8)	9	(60.0)	14	(38.9)
90	0	(0.0)	0	(0.0)	0	(0.0)
80	1	(4.8)	2	(13.3)	3	(8.3)
70	0	(0.0)	0	(0.0)	0	(0.0
60	0	(0.0)	1	(6.7)	1	(2.8)
50	4	(19.0)	0	(0.0)	4	(11.1)
40	3	(14.3)	1	(6.7)	4	(11.1)
30	4	(19.0)	0	(0.0)	4	(11.1)
20	3	(14.3)	0	(0.0)	3	(8.3)
10	1	(4.8)	0	(0.0)	1	(2.8)
No Code	0	(0.0)	2	(13.3)	2	(5.6)
TOTAL	21	(100.0)	15	(100.0)	36	(100.0)

Table B-4

Graduation Status for Special Education Students With Six Regular School Year Semesters of Course Work

Graduation Status	Arthur Hill #	Arthur Hill %	Saginaw High #	Saginaw High %	Total #	Total %
Graduate	16	(76.2)	2	(13.3)	18	(50.0)
Non-Graduate	5	(23.8)	13	(86.7)	18	(50.0)
TOTAL	21	(100.0)	15	(100.0)	36	(100.0)

APPENDIX B

Table B-5

Summer School Participation for Special Education Students With Six Regular School Year Semesters of Course Work

Summer School Participation	Arthur Hill #	Arthur Hill %	Saginaw High #	Saginaw High %	Total #	Total %
Yes	2	(9.5)	0	(0.0)	2	(5.6)
No	19	(90.5)	15	(100.0)	34	(94.4)
TOTAL	21	(100.0)	15	(100.0)	36	(100.0)

Table B-6

COC Course Work for Special Education Students With Six Regular School Year Semesters of Course Work

COC Course Work?	Arthur Hill #	Arthur Hill %	Saginaw High #	Saginaw High %	Total #	Total %
Yes	15	(71.4)	10	(66.7)	25	(69.4)
No	6	(28.6)	5	(33.3)	11	(30.6)
TOTAL	21	(100.0)	15	(100.0)	36	(100.0)

APPENDIX B

Table B-7

Cumulative Grade Point Average (GPA) By COC Participation for Special Education Students With Six Regular School Year Semesters of Course Work

	Cumulative Grade Point Average	
COC Course Work?	Arthur Hill	Saginaw High
Yes	1.79	2.16
No	2.49	1.22
TOTAL	1.99	1.84

Note. Total N = 36 with 21 for Arthur Hill and 15 for Saginaw High. See Table B-6 for further counts by yes and no.

APPENDIX C

Table C-1

Graduate and Non-Graduate Breakdown for Sampled Students With Six Complete Semesters

Status	Arthur Hill #	Arthur Hill %	Saginaw High #	Saginaw High %	Total #	Total %
Graduate	142	(93.4)	122	(74.4)	264	(83.5)
Non-Graduate	10	(6.6)	42	(25.6)	52	(16.5)
Total	152	(100.0)	164	(100.0)	316	(100.0)

Note. N = 316. N = 152 for Arthur Hill and N = 164 for Saginaw High.

Table C-2

COC Enrollment By Grade and Semester for Sampled Students With Six Complete Semesters

COC Enrollment?	Arthur Hill							
	Grade 11				Grade 12			
	Sem 1		Sem 2		Sem 1		Sem 2	
	#	%	#	%	#	%	#	%
Yes	30	(19.7)	29	(19.1)	34	(22.4)	36	(23.7)
No	122	(80.3)	123	(80.9)	118	(77.6)	116	(76.3)
Total	152	(100.0)	152	(100.0)	152	(100.0)	152	(100.0)

COC Enrollment?	Saginaw High							
	Grade 11				Grade 12			
	Sem 1		Sem 2		Sem 1		Sem 2	
	#	%	#	%	#	%	#	%
Yes	61	(37.1)	53	(32.3)	28	(17.1)	35	(21.3)
No	103	(62.8)	111	(67.7)	136	(82.9)	129	(78.7)
Total	164	(100.0)	164	(100.0)	164	(100.0)	164	(100.0)

Note: N = 152 for Arthur Hill and N = 164 for Saginaw High.

APPENDIX C

Table C-3

Average Number of Courses Attempted by Grade and Semester for Sampled Students With Six Complete Semesters

School	Average Number of Courses Attempted					
	Grade 10		Grade 11		Grade 12	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Arthur Hill	5.78	5.74	5.14	5.25	5.16	5.11
Saginaw High	5.92	5.82	5.29	5.35	5.36	5.29

Note: N = 152 for Arthur Hill and N = 164 for Saginaw High.

Table C-4

Average Number of Courses Passed by Grade and Semester for Sampled Students With Six Complete Semesters

School	Average Number of Courses Passed					
	Grade 10		Grade 11		Grade 12	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Arthur Hill	5.22	5.15	4.63	4.67	4.80	4.82
Saginaw High	4.45	4.20	4.27	4.12	4.53	4.04

Note: N = 152 for Arthur Hill and N = 164 for Saginaw High.

APPENDIX C

Table C-5

Average Grade Point Average (GPA) by Grade and Semester for Sampled Students With Six Complete Semesters

School	Average GPA					
	Grade 10		Grade 11		Grade 12	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Arthur Hill	2.17	2.16	2.38	2.32	2.52	2.34
Saginaw High	1.57	1.62	1.97	1.87	2.08	1.77

Note: N = 152 for Arthur Hill and N = 164 for Saginaw High.

Table C-6

Average Hours Absent by Grade and Semester for Sampled Students With Six Complete Semesters

School	Average Hours Absent Per Class Unit					
	Grade 10		Grade 11		Grade 12	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Arthur Hill	31.60	39.70	24.40	26.20	24.10	31.30
Saginaw High	50.12	79.28	66.63	74.94	62.57	81.80

Note: N = 152 for Arthur Hill and N = 164 for Saginaw High.

Table C-7

Center for Arts and Sciences (CAS) Enrollment By Grade and Semester for Sampled Students With Six Complete Semesters

CAS Enrollment?	Arthur Hill												Saginaw High											
	Grade 10				Grade 11				Grade 12				Grade 10				Grade 11				Grade 12			
	Sem 1		Sem 2		Sem 1		Sem 2		Sem 1		Sem 2		Sem 1		Sem 2		Sem 1		Sem 2		Sem 1		Sem 2	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Yes	11	(7.2)	11	(7.2)	7	(4.6)	5	(3.3)	3	(2.0)	2	(1.3)	7	(4.3)	6	(3.7)	4	(2.4)	1	(0.6)	1	(0.6)	1	(0.6)
No	141	(92.8)	141	(92.8)	145	(95.3)	147	(98.0)	149	(98.0)	150	(98.7)	157	(95.7)	158	(96.3)	160	(97.6)	163	(99.4)	163	(99.4)	163	(99.4)
Total	152	(100.0)	152	(100.0)	152	(100.0)	152	(100.0)	152	(100.0)	152	(100.0)	164	(100.0)	164	(100.0)	164	(100.0)	164	(100.0)	164	(100.0)	164	(100.0)

Note: N = 152 for Arthur Hill and N = 164 for Saginaw High.

APPENDIX C

Table C-8

Elective Courses Attempted by Sampled Students With Six Completed Semesters

Elective Course Area	Number of Course Attempted: Arthur Hill #	Arthur Hill %	Saginaw High #	Saginaw High %	Total #	Total %
COC	330	12.9	516	21.2	846	16.9
Language Arts	317	12.4	355	14.6	672	13.5
Mathematics	375	14.6	236	9.7	611	12.2
Science	348	13.6	246	10.1	594	11.9
Business Education	224	8.7	276	11.3	500	10.0
Industrial Arts	203	7.9	211	8.7	414	8.3
Fine Arts	155	6.0	246	10.1	401	8.0
Foreign Languages	209	8.2	122	5.0	331	6.6
Social Studies	172	6.7	37	1.5	209	4.2
Home Economics	104	4.0	78	3.2	182	3.6
CAS	104	4.0	54	2.2	158	3.2
Computer Science	10	0.4	31	1.3	41	0.8
Physical Education	1	0.1[b]	25	1.0	26	0.5
Media Center/Library	9	0.4	0	0.0	9	0.2
Health Education	2	0.1	0	0.0	2	0.1[a]
Total	2563	100.0	2433	99.9[a]	4996	100.0

Note. N = 316. N = 152 for Arthur Hill and N = 164 for Saginaw High.
[a]Rounding.

Table D-1

Operational Definitions By Level

Variable	Levels By Operational Definition		
Deficient history[a]?	Yes (lack one or more semesters)	No (passed both semesters)	
Met requirements 10?	Yes (passed US history 3 & 4, language arts 10, health education, and physical education)	No (failed one or more of the 10th grade courses)	
Met requirements 11?	Yes (passed US history 3 & 4, language arts 10, language arts 11, health education, and physical education)	No (failed one or more of the 10th and 11th grade courses)	
Met requirements timely?	00 (failed 10th and 11th required courses)	01 (passed either 10th or 11th grade requirements but not both)	02 (passed both 10th and and 11th grade requirements)
Amount of courses passed?	Few (3 or less courses)	Many (4 or more courses)	
Failure in grade __?	Yes (one or more courses failed)	No (all courses attempted passed)	
Semesters with failures.	Low (2 or less failures)	Moderate (3 or 4 failures)	High (5 or more failures)
Deficient in _____[b]?	Yes (lack one or more required courses)	No (passed all required courses)	
Load of course attempted.	Light (5 or less courses)	Heavy (6 or more courses)	
Summer school?	Yes (one or more attempted)	No (no courses attempted)	
Grade rank.	Low (2.50 or less GPA)	High (2.51 or higher GPA)	
Median absences across all six semesters[c]	Below (below median hourly absence rate)	Above (at or above median absence rate)	

[a]History only, not in combination with other courses. [b]With or without other coursework deficiencies. [c]Median rate for district = 2,347.5, Arthur Hill = 1,455.0, Saginaw High = 3,702.5, White = 1,472.5, minority = 2,910.0, male = 2,330.0, and female = 2,377.5.

APPENDIX E

Table E-1

Chi-square Test Statistics and Contingency Coefficients Related to Research Question 1A. "Are Certain Required Courses (in Isolation or in Combination with Others) a Detriment to COC Enrollment?"

Variable: COC attendance versus...	Grade	Level of Comparison[b]	x^2	df	p-value	C
Deficient History[c]	10	DL	0.229	1	0.631	0.026
Deficient History[c]	11	DL	2.450	1	0.117	0.087
Deficient History[c]	10	AH	0.639	1	0.424	0.064
Deficient History[c]	10	SH	2.734	1	0.098	0.128
Deficient History[c]	11	AH	0.196	1	0.657	0.035
Deficient History[c]	11	SH	3.204	1	0.073	0.138
White Deficient History[c]	10	DL	0.373	1	0.541	0.065
Minority Deficient History[c]	10	DL	1.000	1	0.315	0.066
Non-minority Deficient History[c]	11	DL	0.182	1	0.669	0.002
Minority Deficient History[c]	11	DL	2.529	1	0.111	0.104
Male Deficient History[c]	10	DL	0.000	1	1.000	0.000
Female Deficient History[c]	10	DL	0.434	1	0.509	0.049
Male Deficient History[c]	11	DL	1.675	1	0.195	0.108

Note. [a]Significant at .05 or less.
[b]Where DL = District-level; AH = Arthur Hill; and SH = Saginaw High.
[c]History only, not in combination with other courses.
[d]With or without other coursework deficiencies.

APPENDIX E

Table E-1 (Continued)

Variable: CCC attendance versus...	Grade	Level of Comparison[b]	x^2	df	p-value	C
Female						
Deficient History[c]	11	DL	0.681	1	0.408	0.062
Deficient Language Arts[d]	10	DL	0.000	1	0.993	0.000
Deficient Health Ed.[d]	10	DL	0.360	1	0.548	0.033
Deficient Physical Ed.[d]	10	DL	3.065	1	0.080	0.098
Deficient History[d]	10	DL	0.283	1	0.594	0.029
Deficient Language Arts[d]	11	DL	0.045	1	0.830	0.012
Defecient Health Ed.[d]	11	DL	0.263	1	0.607	0.028
Deficient History[d]	11	DL	0.942	1	0.331	0.054
Deficient Language Arts[d]	Any time	DL	0.180	1	0.671	0.023
Deficient Health Ed.[d]	Any time	DL	0.359	1	0.548	0.033
Deficient Physical Ed.[d]	Any time	DL	3.065	1	0.080	0.098
Deficient History[d]	Any time	DL	0.478	1	0.489	0.038
Deficient Language Arts[d]	Any time	AH	2.213	1	0.136	0.119
Deficient Language Arts[d]	Any time	SH	0.878	1	0.348	0.073
Deficient in credits-Language Arts[d]	10	DL	0.000	1	0.993	0.000
Deficient in credits - Health Education[d]	10	DL	0.359	1	0.548	0.033
Deficient in credits - Physical Education[d]	10	DL	3.065	1	0.080	0.098

Note. [a]Significant at .05 or less.
[b]Where DL = District-level; AH = Arthur Hill; and SH = Saginaw High.
[c]History only, not in combination with other courses.
[d]With or without other coursework deficiencies.

APPENDIX E

Table E-1 (Continued)

Variable: COC attendance versus...	Grade	Level of Comparison[b]	x^2	df	p-value	C
Deficient in credits - History[d]	10	DL	0.283	1	0.594	0.029
Deficient in credits - Language Arts[d]	11	DL	0.045	1	0.830	0.012
Deficient in credits - Health Education[d]	11	DL	0.263	1	0.607	0.028
Deficient in credits - History[d]	11	DL	0.942	1	0.331	0.054
Deficient in credits - Language Arts[d]	Either yr.	DL	0.180	1	0.671	0.023
Deficient in credits - Health Education[d]	Either yr.	DL	0.359	1	0.548	0.033
Deficient in credits - Physical Education[d]	Either yr.	DL	3.065	1	0.080	0.098
Deficient in credits - History[d]	Either yr.	DL	0.478	1	0.489	0.038
Deficient in credits - Language Arts[d]	10	AH	2.213	1	0.136	0.119
Deficient in credits - Language Arts[d]	10	SH	0.878	1	0.348	0.073
Deficient in credits - Physical Education[d]	10	AH	7.817	1	0.052	0.221
Deficient in credits - Physical Education[d]	10	SH	0.007	1	0.932	0.006

Note. [a]Significant at .05 or less.
[b]Where DL = District-level; AH = Arthur Hill; and SH = Saginaw High.
[c]History only, not in combination with other courses.
[d]With or without other coursework deficiencies.

APPENDIX E

Table E-1 (Continued)

Variable: COC attendance versus...	Grade	Level of Comparison[b]	x^2	df	p-value	C
Deficient in credits - History[d]	10	AH	0.420	1	0.516	0.052
Deficient in credits - History[d]	10	SH	0.013	1	0.097	0.009
Deficient in credits - Language Arts[d]	11	SH	0.337	1	0.561	0.045
Deficient in credits - History[d]	11	SH	0.040	1	0.840	0.015
Deficient in credits - Language Arts[d]	Either yr.	AH	0.952	1	0.329	0.078
Deficient in credits - Language Arts[d]	Either yr.	SH	0.009	1	0.924	0.007
Deficient in credits - Health Education[d]	Either yr.	SH	1.132	1	0.287	0.082
Deficient in credits - Physical Education[d]	Either yr.	SH	0.007	1	0.932	0.006
Deficient in credits - History[d]	Either yr.	AH	0.420	1	0.516	0.052
Deficient in credits - History[d]	Either yr.	SH	0.127	1	0.721	0.027
Deficient in credits - Language Arts[d] (White)	10	DL	4.640[a]	1	0.031	0.226
Deficient in credits - Language Arts[d] (Minority)	10	DL	0.765	1	0.381	0.057

Note. [a]Significant at .05 or less.
[b]Where DL = District-level; AH = Arthur Hill; and SH = Saginaw High.
[c]History only, not in combination with other courses.
[d]With or without other coursework deficiencies.

Table E-1 (Continued)

Variable: COC attendance versus...	Grade	Level of Comparison[b]	x^2	df	p-value	C
Deficient in credits - Health Education[d] (Minority)	10	DL	0.219	1	0.639	0.030
Deficient in credits - Physical Education[d] (Minority)	10	DL	1.505	1	0.219	0.080
Deficient in credits - History[d] (Minority)	10	DL	0.732	1	0.392	0.056
Deficient in credits - Language Arts[d] (Minority)	11	DL	0.193	1	0.659	0.029
Deficient in credits - Health Education[d] (Minority)	11	DL	1.332	1	0.248	0.075
Deficient in credits - History[d] (Minority)	11	DL	0.127	1	0.721	0.023
Deficient in credits - Language Arts[d] (Minority)	Either yr.	DL	0.008	1	0.925	0.006
Deficient in credits - Health Education[d] (Minority)	Either yr.	DL	0.219	1	0.639	0.030
Deficient in credits - Phsycial Education[d] (Minority)	Either yr.	DL	1.505	1	0.2199	0.080
Deficient in credits - History[d] (Minority)	Either yr.	Minority	1.143	1	0.284	0.070

Note. [a]Significant at .05 or less.
[b]Where DL = District-level; AH = Arthur Hill; and SH = Saginaw High.
[c]History only, not in combination with other courses.
[d]With or without other coursework deficiencies.

APPENDIX E

Table E-2

Chi-square Test Statistics and Contingency Coefficients Related to Research Question 1B. "Are Certain Success Levels at the Home School More of a Detriment than Others to COC Enrollment?"

Variable: COC attendance versus...	Grade	Level of Comparison[b]	x^2	df	p-value	C
Met requirements	10	DL	1.970	1	0.159	0.078
Met requirements	11	DL	0.028	1	0.866	0.009
Met requirements timely	All	DL	7.825[a]	2	0.020	0.155
Amount of courses passed Semester 1	10	DL	1.898	1	0.168	0.077
Amount of courses passed Semester 2	10	DL	14.135[a]	1	0.000	0.206
Amount of courses passed Semester 1	11	DL	72.986[a]	1	0.000	0.433
Amount of courses passed Semester 2	11	DL	69.139[a]	1	0.000	0.423
Amount of courses passed Semester 1	12	DL	48.781[a]	1	0.000	0.365
Amount of courses passed Semester 2	12	DL	33.861[a]	1	0.000	0.311
Failure Semester 1	10	DL	8.405[a]	1	0.003	0.160
Failure Semester 2	10	DL	7.180[a]	1	0.007	0.149
Failure Semester 1	11	DL	5.774[a]	1	0.016	0.133
Failure Semester 2	11	DL	8.048[a]	1	0.004	0.157
Failure Semester 1	12	DL	3.909[a]	1	0.048	0.110
Failure Semester 2	12	DL	2.868	1	0.090	0.094
Semesters with failures combined	All	DL	13.881[a]	2	0.001	0.205

Note. [a]Significant at .05 or less.
[b]Where DL = District-level; AH = Arthur Hill; and SH = Saginaw High.

APPENDIX E

Table E-3

Chi-square Test Statistics and Contingency Coefficients Related to Research Question 1C. "Are Full Load Schedules with Required Courses Early in Students' High School Career Related to Students' Decisions to Attend COC?"

Variable: COC attendance versus...	Grade	Level of Comparison[b]	x^2	df	p-value	C
Load attempted Semester 1 Light-Heavy	10	DL	0.000	1	0.997	0.000
Load Attempted Semester 2 Light-Heavy	10	DL	0.109	1	0.740	0.018

Note. [a]Significant at .05 or less.
[b]Where DL = District-level; AH = Arthur Hill; and SH = Saginaw High.

Table E-4

Chi-square Test Statistics and Contingency Coefficients Related to Research Question 1D. "Are Full Load Schedules (Six or More Courses Per Semester Which are Influenced by Choice or Past Failure) Related to not Attending COC?"

Variable: COC attendance versus...	Grade	Level of Comparison[b]	x^2	df	p-value	C
Load attempted[c] Semester 1 Light-Heavy	11	DL	55.221[a]	1	0.000	0.385
Load attempted Semester 2 Light-Heavy	11	DL	43.108[a]	1	0.000	0.346
Load attempted Semester 1 Light-Heavy	12	DL	4.511[a]	1	0.033	0.118
Load attempted Semester 2 Light-Heavy	12	DL	4.511[a]	1	0.033	0.118

Note. [a]Significant at .05 or less.
[b]Where DL = District-level; AH = Arthur Hill; and SH = Saginaw High.
[c]In determining schedule load, each COC (or any other block) course was considered equal to a single home school course.

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APPENDIX E

Table E-5

Chi-square Test Statistics and Contingency Coefficients Related to Research Question 1E. "Of Those Students Not Passing a Course During a School Year (Sophomore or Junior Year), Does Taking a Summer School Course(s) After a Failure Increase the Probability of COC Enrollment?"

Variable: COC attendance versus...	Grade	Level of Comparison[b]	x^2	df	p-value	C
Summer school	10	DL	0.552	1	0.457	0.041
Summer school	11	DL	0.103	1	0.747	0.018
Summer school	10 and/or 11	DL	0.001	1	0.966	0.002

Note. [a]Significant at .05 or less.
[b]Where DL = District-level; AH = Arthur Hill; and SH = Saginaw High.

APPENDIX E

Table E-6

Chi-square Test Statistics and Contingency Coefficients Related to Research Question 2. "Do Students With a 2.51 or Higher Grade Point Average (GPA) Enroll in COC More Often Than Do Students With a 2.50 or Less GPA?", 2A. "Is the Tendency to Attend COC the Same at Both High Schools?", 2B. "Is the Tendency to Attend COC the Same for Each of the Major Racial/ Ethnic Groupings?", and 2C. "Is the Tendency to Attend COC the Same for Both Genders?"

Variable: COC attendance versus...	Grade	Level of Comparison[b]	x^2	df	p-value	C
Grade rank	All	DL	13.420[a]	1	0.000	0.201
Grade rank	All	AH	9.202[a]	1	0.002	0.238
Grade rank	All	SH	2.549	1	0.110	0.123
White Grade rank	All	DL	10.995[a]	1	0.000	0.336
Minority Grade rank	All	DL	2.043	1	0.152	0.093
Male Grade rank	All	DL	3.472	1	0.062	0.155
Female Grade rank	All	DL	10.062[a]	1	0.001	0.232

Note. [a]Significant at .05 or less.
[b]Where DL = District-level; AH = Arthur Hill; and SH = Saginaw High.

APPENDIX E

Table E-7

Chi-square Test Statistics and Contingency Coefficients Related to Research Question 3. "Do Students with Better than Average Hourly Attendance Enroll in COC More Often than do Students with a Less than Average Hourly Attendance?", 3A. "Is the Tendency to Enroll in the COC the Same at Both Schools?", 3B. "Is the Tendency to Enroll in the COC the Same for Each of the Major Racial/Ethnic Groupings?", and 3C. "Is the Tendency to Enroll in the COC the Same for Both Genders?"

Variable: COC attendance versus...	Grade	Level of Comparison[b]	x^2	df	p-value	C
Level of hourly attendance	All	DL	10.837[a]	1	0.001	0.182
Level of hourly attendance	All	AH	6.315[a]	1	0.012	0.199
Level of hourly attendance	All	SH	0.097	1	0.754	0.024
White Level of hourly attendance	All	DL	4.372[a]	1	0.036	0.219
Minority Level of hourly attendance	All	DL	3.415	1	0.064	0.120
Male Level of hourly attendance	All	DL	2.337	1	0.126	0.128
Female Level of hourly attendance	All	DL	9.326[a]	1	0.002	0.224

Note. [a]Significant at .05 or less.
[b]Where DL = District-level; AH = Arthur Hill; and SH = Saginaw High.

APPENDIX F

Table F-1

Deficient in Language Arts (White) Grade 10 by COC Attendance Contingency Table With Associated Chi-square Statistics at District Level

Attended COC?	Deficient in Language Arts: Yes	Deficient in Language Arts: No	Total
Yes	22 (17.58)[a]	5 (9.42)	27
No	34 (38.42)	25 (20.58)	59
Total	56	30	86

-Associated Statistics

Chi-square	df	p-value	C	Remarks
4.640*	1	0.031	0.226	Significant results stem from those not deficient in language arts attending the COC less often than expected.

Note. N = 86. C = Contingency Coefficient. [a]Expected cell value. *Significant at .05 or less.

APPENDIX F

Table F-2

Deficient in Language Arts (White) Grade 11 by COC Attendance Contingency Table With Associated Chi-square Statistics at District Level

Attended COC?	Deficient in Language Arts		Total
	Yes	No	
Yes	22 (17.58)[a]	5 (9.42)	27
No	34 (38.42)	25 (20.58)	59
Total	56	30	86

-Associated Statistics

Chi-square	df	p-value	C	Remarks
4.640*	1	0.031	0.226	Significant results stem from those not deficient in language arts attending the COC less often than expected.

Note. N = 86. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-3

Met Grade Level Requirements by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Met Grade Level Requirements?			Total
	Unmet 1 year	Met 1 year	Met 2 years	
Yes	57 (45.52)[a]	27 (32.51)	53 (58.96)	137
No	48 (59.47)	48 (42.48)	83 (77.03)	179
Total	105	75	136	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
7.825*	2	0.020	0.155	Significant results came almost entirely from students not meeting requirements with more of these students attending COC than not attending.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-4

Courses Passed Grade 10 Second Semester by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Courses Passed		Total
	Few	Many	
Yes	63 (47.26)[a]	74 (89.74)	137
No	133 (61.74)	133 (117.26)	179
Total	109	207	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
14.135*	1	0.000	0.206	Significant results from students with few courses passed attending COC more often than expected and students with many courses passed attending COC less often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-5

Courses Passed Grade 11 First Semester by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Courses Passed		Total
	Few	Many	
Yes	99 (61.65)[a]	38 (75.44)	137
No	43 (80.44)	136 (98.56)	179
Total	142	174	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
72.986*	1	0.000	0.433	Significant results from students with few courses passed attending COC more often than expected and students with many courses passed attending COC less often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-6

Courses Passed Grade 11 Second Semester by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Courses Passed		Total
	Few	Many	
Yes	98 (61.56)[a]	39 (75.44)	137
No	44 (80.44)	135 (98.56)	179
Total	142	174	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
69.139*	1	0.000	0.423	Significant results from students with few courses passed attending COC more often than expected and students with many courses passed attending COC less often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-7

Courses Passed Grade 12 First Semester by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Courses Passed		Total
	Few	Many	
Yes	74 (45.09)[a]	63 (91.19)	137
No	30 (58.91)	149 (120.09)	179
Total	104	212	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
48.781*	1	0.000	0.365	Significant results from students with few courses passed attending COC more often than expected and students with many courses passed attending COC less often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-8

Courses Passed Grade 12 Second Semester by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Courses Passed		Total
	Few	Many	
Yes	75 (50.29)[a]	62 (86.71)	137
No	41 (65.71)	138 (113.29)	179
Total	116	200	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
33.861*	1	0.000	0.311	Significant results from students with few courses passed attending COC more often than expected and students with many courses passed attending COC less often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-9

Failed Course(s) in Grade 10 First Semester by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Course(s) Failed		Total
	Yes	No	
Yes	83 (66.77)[a]	54 (70.23)	137
No	79 (91.77)	100 (87.23)	179
Total	162	154	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
8.405*	1	0.003	0.160	Significance resulted from all four cells with more students who failed attending COC than expected and more who did not fail not attending COC more often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-10

Failed Course(s) in Grade 10 Second Semester by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Course(s) Failed: Yes	Course(s) Failed: No	Total
Yes	79 (67.20)[a]	58 (69.80)	137
No	76 (87.80)	103 (91.20)	179
Total	155	161	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
7.180*	1	0.007	0.149	Significance resulted from all four cells with more students who failed attending COC than expected and more who did not fail not attending COC more often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-11

Failed Course(s) in Grade 11 First Semester by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Course(s) Failed		Total
	Yes	No	
Yes	69 (58.53)[a]	68 (78.74)	137
No	66 (76.47)	113 (102.53)	179
Total	135	181	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
5.774*	1	0.016	0.133	Significance resulted from all four cells with more students who failed attending COC than expected and more who did not fail not attending COC more often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-12

Failed Course(s) in Grade 11 Second Semester by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Course(s) Failed		Total
	Yes	No	
Yes	70 (57.66)[a]	67 (79.34)	137
No	63 (75.34)	116 (103.66)	179
Total	133	183	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
8.048*	1	0.004	0.157	Significance resulted from all four cells with more students who failed attending COC than expected and more who did not fail not attending COC more often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-13

Failed Course(s) in Grade 12 First Semester by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Course(s) Failed		Total
	Yes	No	
Yes	51 (42.92)[a]	86 (94.80)	137
No	48 (56.08)	131 (129.92)	179
Total	99	217	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
3.909*	1	0.048	0.110	Significance resulted from all four cells with more students who failed attending COC than expected and more who did not fail not attending COC more often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-14

Failed Course(s) in Grades 10–12 by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Course(s) Failed			Total
	Low	Moderate	High	
Yes	109 (92.90)[a]	37 (48.15)	33 (37.95)	179
No	55 (71.10)	48 (36.85)	34 (29.05)	137
Total	164	85	67	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
13.881*	2	0.001	0.205	Significant results stem from both low failure rate students attending COC less than expected and moderate failure students attending COC more than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-15

Load Attempted First Semester Grade 11 by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Load Attempted[b]		Total
	Light	Heavy	
Yes	108 (75.44)[a]	29 (61.56)	137
No	66 (98.56)	113 (80.44)	179
Total	174	142	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
55.221*	1	0.000	0.385	Significant results stem from light load attempters attending COC more often than expected and heavy attempters attending COC less often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value. [b]In determining schedule load, each COC (or any other block) course was considered equal to a single home school course. *Significant at .05 or less.

APPENDIX F

Table F-16

Load Attempted Second Semester Grade 11 by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Load Attempted[b]		Total
	Light	Heavy	
Yes	100 (71.10)[a]	37 (65.90)	137
No	64 (92.90)	115 (86.10)	179
Total	164	152	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
43.108*	1	0.000	0.346	Significant results stem from light load attempters attending COC more often than expected and heavy attempters attending COC less often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value. [b]In determining schedule load, each COC (or any other block) course was considered equal to a single home school course. *Significant at .05 or less.

APPENDIX F

Table F-17

Load Attempted First Semester Grade 12 by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	Load Attempted[b]		Total
	Light	Heavy	
Yes	89 (79.77)[a]	48 (57.23)	137
No	95 (104.23)	84 (74.77)	179
Total	184	132	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
4.511*	1	0.033	0.118	Significant results stem from light load attempters attending COC more often than expected and heavy attempters attending COC less often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value. [b]In determining schedule load, each COC (or any other block) course was considered equal to a single home school course. *Significant at .05 or less.

APPENDIX F

Table F-18

GPA Group by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	GPA Group ≤ 2.50	GPA Group ≥ 2.51	Total
Yes	111 (96.24)[a]	26 (40.75)	137
No	111 (125.75)	68 (53.24)	179
Total	222	94	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
13.420*	1	0.000	0.201	Significant results mostly from students with GPA's over 2.51 deciding not to attend COC than deciding to attend.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-19

GPA Group by COC Attendance Contingency Table with Associated Chi-square Statistics at Arthur Hill

Attended COC?	GPA Group ≤ 2.50	GPA Group ≥ 2.51	Total
Yes	43 (34.12)[a]	14 (22.87)	57
No	48 (56.87)	47 (38.12)	95
Total	91	61	152

-Associated Statistics

Chi-square	df	p-value	C	Remarks
9.202*	1	0.002	0.238	Significant results came about from both students with GPA's over 2.51 choosing to attend less often and students with GPA's less than 2.50 choosing to attend more often.

Note. N = 152. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-20

White GPA Group by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	GPA Group ≤ 2.50	GPA Group ≥ 2.51	Total
Yes	20 (12.87)[a]	7 (14.12)	27
No	21 (28.12)	38 (30.87)	59
Total	41	45	86

-Associated Statistics

Chi-square	df	p-value	C	Remarks
10.995*	1	0.000	0.336	Significance resulted almost equally from students less than 2.50 choosing to attend more often and those with a GPA over 2.51 choosing to attend less often.

Note. N = 86. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-21

Female GPA Group by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level

Attended COC?	GPA Group ≤ 2.50	GPA Group ≥ 2.51	Total
Yes	59 (49.19)[a]	15 (24.80)	74
No	58 (67.80)	44 (34.19)	102
Total	117	59	176

-Associated Statistics

Chi-square	df	p-value	C	Remarks
10.062*	1	0.001	0.232	Significant results from female students with GPA's over 2.51 chose to attend less often than they chose to attend.

Note. N = 176. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-22

Level of Hourly Absences by COC Attendance Contingency Table With Associated Chi-square Statistics at District Level

	Level of Hourly Absence		
Attended COC?	Below Average	At or Above Average	Total
Yes	54 (68.50)[a]	83 (68.50)	137
No	104 (89.50)	75 (89.50)	179
Total	158	158	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
10.837*	1	0.001	0.182	Significance resulted from students with less than the average hourly absences attending COC less often than expected while students with higher than the average hourly absences (bad attendance) attending COC more often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-23

Level of Hourly Absences by COC Attendance Contingency Table With Associated Chi-square Statistics at Arthur Hill

	Level of Hourly Absence		
Attended COC?	Below Average	At or Above Average	Total
Yes	21 (28.50)[a]	36 (28.50)	57
No	55 (47.50)	40 (47.50)	95
Total	76	76	152

-Associated Statistics

Chi-square	df	p-value	C	Remarks
6.315*	1	0.012	0.199	Significance resulted from students with less than the average hourly absences attending COC less often than expected while students with higher than the average hourly absences (bad attendance) attending COC more often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-24

Level of Hourly Absences for White Students by COC Attendance Contingency Table With Associated Chi-square Statistics at District Level

	Level of Hourly Absence		
Attended COC?	Below Average	At or Above Average	Total
Yes	9 (13.50)[a]	18 (13.50)	27
No	34 (29.50)	25 (29.50)	59
Total	43	43	86

-Associated Statistics

Chi-square	df	p-value	C	Remarks
4.372*	1	0.036	0.219	Significance resulted from students with less than the average hourly absences attending COC less often than expected while students with higher than the average hourly absences (bad attendance) attending COC more often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX F

Table F-25

Level of Hourly Absences for Female Students by COC Attendance Contingency Table With Associated Chi-square Statistics at District Level

	Level of Hourly Absence		
Attended COC?	Below Average	At or Above Average	Total
Yes	27 (37.00)[a]	47 (37.00)	74
No	61 (51.00)	41 (51.00)	102
Total	98	88	176

-Associated Statistics

Chi-square	df	p-value	C	Remarks
9.326*	1	0.036	0.219	Significance resulted from students with less than the average hourly absences attending COC less often than expected while students with higher than the average hourly absences (bad attendance) attending COC more often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX G

Table G-1

Chi-square Test Statistics and Contingency Coefficients Related to Research Question 2. "Do Students With a 2.51 or Higher Grade Point Average (GPA) Enroll in COC More Often Than Do Students With a 2.50 or Less GPA?", 2A. "Is the Tendency to Attend COC the Same at Both High Schools?", 2B. "Is the Tendency to Attend COC the Same for Each of the Major Racial/ Ethnic Groupings?", and 2C. "Is the Tendency to Attend COC the Same for Both Genders?"

Variable: COC attendance versus...	Grade[c]	Level of Comparison[b]	x^2	df	p-value	C
Grade rank	10	DL	18.969[a]	1	0.000	0.237
Grade rank	10	AH	12.991[a]	1	0.000	0.280
Grade rank	10	SH	4.890[a]	1	0.027	0.170
Males Grade rank	10	DL	7.516[a]	1	0.006	0.225
Females Grade rank	10	DL	11.351[a]	1	0.000	0.246
White Grade rank	10	DL	10.060[a]	1	0.001	0.323
Minority Grade rank	10	DL	6.969[a]	1	0.008	0.171

Note. [a]Significant at .05 or less.
[b]Where DL = District-level; AH = Arthur Hill; and SH = Saginaw High.
[c]Second semester.

APPENDIX G

Table G-2

GPA Group by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level - Grade 10, Semester 2

Attended COC?	GPA Group ≤ 2.50	GPA Group ≥ 2.51	Total
Yes	119 (102.32)[a]	18 (34.68)	137
No	117 (133.68)	62 (45.32)	179
Total	236	80	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
18.969*	1	0.000	0.237	Significant results mostly from students with GPA's over 2.51 deciding not to attend COC than deciding to attend.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX G

Table G-3

GPA Group by COC Attendance Contingency Table with Associated Chi-square Statistics at Arthur Hill - Grade 10, Semester 2

Attended COC?	GPA Group ≤ 2.50	GPA Group ≥ 2.51	Total
Yes	49 (39.00)[a]	8 (18.00)	57
No	55 (65.00)	40 (30.00)	95
Total	104	48	152

-Associated Statistics

Chi-square	df	p-value	C	Remarks
12.991*	1	0.000	0.280	Significant results came about from both students with GPA's over 2.51 choosing to attend less often than students with GPA's less than 2.50 choosing not to attend more often.

Note. N = 152. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX G

Table G-4

GPA Group by COC Attendance Contingency Table with Associated Chi-square Statistics at Saginaw High - Grade 10, Semester 2

Attended COC?	GPA Group ≤ 2.50	GPA Group ≥ 2.51	Total
Yes	70 (64.39)[a]	10 (15.61)	80
No	62 (67.61)	22 (16.39)	84
Total	132	32	164

-Associated Statistics

Chi-square	df	p-value	C	Remarks
4.890*	1	0.027	0.170	Significant results came about from both students with GPA's over 2.51 choosing to attend less often and students with GPA's less than 2.50 choosing to attend more often.

Note. N = 164. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX G

Table G-5

Male GPA Group by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level - Grade 10, Semester 2

	GPA Group		
Attended COC?	≤ 2.50	≥ 2.51	Total
Yes	55 (48.15)[a]	8 (14.85)	63
No	52 (58.85)	25 (18.15)	77
Total	107	33	140

-Associated Statistics

Chi-square	df	p-value	C	Remarks
7.516*	1	0.006	0.225	Significant results from male students with GPA's over 2.51 chose to attend less often than they chose to attend.

Note. N = 140. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX G

Table G-6

Female GPA Group by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level - Grade 10, Semester 2

Attended COC?	GPA Group ≤ 2.50	GPA Group ≥ 2.51	Total
Yes	64 (54.24)[a]	10 (19.76)	74
No	65 (74.76)	37 (27.24)	102
Total	129	47	176

-Associated Statistics

Chi-square	df	p-value	C	Remarks
11.351*	1	0.000	0.246	Significant results from female students with GPA's over 2.51 chose to attend less often than they chose to attend.

Note. N = 176. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX G

Table G-7

White GPA Group by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level - Grade 10, Semester 2

Attended COC?	GPA Group ≤ 2.50	GPA Group ≥ 2.51	Total
Yes	23 (16.33)[a]	4 (10.67)	27
No	29 (35.67)	30 (16.33)	59
Total	52	34	86

-Associated Statistics

Chi-square	df	p-value	C	Remarks
10.060*	1	0.001	0.323	Significance resulted almost equally from students less than 2.50 choosing to attend more often and those with a GPA over 2.51 choosing to attend less often.

Note. N = 86. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX G

Table G-8

Minority GPA Group by COC Attendance Contingency Table with Associated Chi-square Statistics at District Level - Grade 10, Semester 2

Attended COC?	GPA Group ≤ 2.50	GPA Group ≥ 2.51	Total
Yes	96 (88.00)[a]	14 (22.00)	110
No	88 (96.00)	32 (24.00)	120
Total	184	46	230

-Associated Statistics

Chi-square	df	p-value	C	Remarks
6.969*	1	0.008	0.171	Significance resulted almost equally from students less than 2.50 choosing to attend more often and those with a GPA over 2.51 choosing to attend less often.

Note. N = 230. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX G

Table G-9

Chi-square Test Statistics and Contingency Coefficients Related to Research Question 3. "Do Students with Better than Average Hourly Attendance Enroll in COC More Often than do Students with a Less than Average Hourly Attendance?", 3A. "Is the Tendency to Enroll in the COC the Same at Both Schools?", 3B. "Is the Tendency to Enroll in the COC the Same for Each of the Major Racial/Ethnic Groupings?", and 3C. "Is the Tendency to Enroll in the COC the Same for Both Genders?"

Variable: COC attendance versus...	Grade[c]	Level of Comparison[b]	x^2	df	p-value	C
Level of hourly attendance	10	DL	12.383[a]	1	0.000	0.194
Level of hourly attendance	10	AH	2.273	1	0.131	0.121
Level of hourly attendance	10	SH	7.907[a]	1	0.004	0.214
Males Level of hourly attendance	10	DL	0.721	1	0.395	0.071
Females Level of hourly attendance	10	DL	14.761[a]	1	0.000	0.278
Minority Level of hourly attendance	10	DL	9.253[a]	1	0.002	0.196
White Level of hourly attendance	10	DL	0.053	1	0.816	0.025

Note. [a]Significant at .05 or less.
[b]Where DL = District-level; AH = Arthur Hill; and SH = Saginaw High.
[c]Second Semester.

APPENDIX G

Table G-10

Level of Hourly Absences by COC Attendance Contingency Table With Associated Chi-square Statistics at District Level - Grade 10, Semester 2

	Level of Hourly Absence		
Attended COC?	Below Average	At or Above Average	Total
Yes	53 (68.50)[a]	84 (68.50)	137
No	105 (89.50)	74 (89.50)	179
Total	158	158	316

-Associated Statistics

Chi-square	df	p-value	C	Remarks
12.383*	1	0.000	0.194	Significance resulted from students with less than the average hourly absences attending COC less often than expected while students with higher than the average hourly absences (bad attendance) attending COC more often than expected.

Note. N = 316. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX G

Table G-11

Level of Hourly Absences by COC Attendance Contingency Table With Associated Chi-square Statistics at Saginaw High - Grade 10, Semester 2

	Level of Hourly Absence		
Attended COC?	Below Average	At or Above Average	Total
Yes	31 (40.00)[a]	49 (40.00)	80
No	51 (42.00)	33 (42.00)	84
Total	82	82	164

-Associated Statistics

Chi-square	df	p-value	C	Remarks
7.907*	1	0.004	0.214	Significance resulted from students with less than the average hourly absences attending COC less often than expected while students with higher than the average hourly absences (bad attendance) attending COC more often than expected.

Note. N = 164. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX G

Table G-12

Level of Hourly Absences for Female Students by COC Attendance Contingency Table With Associated Chi-square Statistics at District Level - Grade 10, Semester 2

	Level of Hourly Absence		
Attended COC?	Below Average	At or Above Average	Total
Yes	24 (36.58)[a]	50 (37.42)	74
No	63 (50.42)	39 (51.58)	102
Total	87	89	176

-Associated Statistics

Chi-square	df	p-value	C	Remarks
14.761*	1	0.000	0.278	Significance resulted from students with less than the average hourly absences attending COC less often than expected while students with higher than the average hourly absences (bad attendance) attending COC more often than expected.

Note. N = 176. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.

APPENDIX G

Table G-13

Level of Hourly Absences for Minority Students by COC Attendance Contingency Table With Associated Chi-square Statistics at District Level - Grade 10, Semester 2

	Level of Hourly Absence		
Attended COC?	Below Average	At or Above Average	Total
Yes	43 (54.52)[a]	67 (55.48)	110
No	71 (59.48)	49 (60.52)	120
Total	114	116	230

-Associated Statistics

Chi-square	df	p-value	C	Remarks
9.253*	1	0.002	0.196	Significance resulted from students with less than the average hourly absences attending COC less often than expected while students with higher than the average hourly absences (bad attendance) attending COC more often than expected.

Note. N = 230. C = Contingency Coefficient. [a]Expected cell value.
*Significant at .05 or less.